G. R. S. 58]

Previous references.

LB

1916

(Local Bds)

File No. 12-15

Serial Nos. 26 & 27

Later references.

LB 12-15-8 22, 24-26 & 43 B July 1916

Law 120-18 (1-6)

VP 64-31-4

GENERAL AND REVENUE SECRETARIAT.

Serial Nos. 26 & 27

Part B for April 1916

SUBJECT.

Instructions for sinking drinking water wells with two type designs.

G.O. No 9500-10-8 7.4.16

Circulate the type designs of drinking water wells to be sunk, together with certain instructions for the information of the District Boards

W D 1351—GPB—20,000—13-12-15

Asst. Director 13/5/16

G. R. S. 111 1915-16

GENERAL AND REVENUE SECRETARIAT.

(RB)

NOTES.

File No. 12/15

FILE HEADING.

Rural Water Supply Scheme

From

The Chief Engineer, Mysore

No. 2178/3 | Dated 6.3.16 | Received 13.3.16

Diary No. 3320 | Enclos. | Spare Copies. | Serial No. 26

BRIEF ABSTRACT OF LETTER.

R Adverting to paras 7 and 11 of G.O.No. 5248-59 Secn 38-12-38 dated 6th Jany 1915, forwards a set of instructions for sinking drinking water wells with two type designs.

NOTES AND ORDERS.

R In para 7 of the order referred to the Chief Engineer was requested to furnish the Presidents with a few simple suggestions for selecting suitable sites. It is not known

NOTES—First Sheet.

GPB-20 006-8-8-14

(2

G. R. S. 12]

General and Revenue Secretariat. LB File No. 12 of 1915-16

Serial No.	
	Whether the Chief Engineer has furnished Suggestions to the Presidents direct irrespective of the set of instructions now submitted to Govt.
	In para 11 of the same order the Chief Engineer was requested to submit by 31st March 1915 a set of instructions for Sinking wells. This present report has been received one year after it fell due.
	2) One of the chief reasons amongst several others that account for the failure in the attempts to tap water appears to be that the local officers and people do not know the nature of the inner strata and exactly where a spring is likely to be tapped. The Chief Engineer suggests that the sites have to be decided after sinking trial pits and observing the character of the soils through which the existing wells are sunk in the locality. He further suggests that wells should not be sunk ~~far away~~ close to the village. Generally villages spring up in localities where springs can be easily tapped and villages where water facilities do not exist are deserted

This instruction has already been conveyed in para 7 of the order in the absence of better suggestions & the instructions do not go beyond what is being generally borne in mind by the local officers.

NOTE—Contn. sheet.

(3

G. R. S. 12]

General and Revenue Secretariat. | File No. 12 of 1915-16

Serial No. (3)

Subd for orders
KP
16/20/16 gms
17/3

(4) Draft approving the mechanics of the designs

(5) Enquire about mechanics re-wakes finding a choice of sites for wells. The Revd Sec^y has separately suggested a note re a "Water Finder" used in the Bombay Pres^y. Materials to be got from Dewan

We have an idea of getting a set for the Sc Cafes
23/3/16
KP
18/3

Hon
18/3

KP

(6) Draft put up for approval of the orders

KP
18.3.16

Hon
20/3

Rec Sec^y
20/3

of 2nd number

23/3/16

Read. 25/3

Q Is there a Sanitary Engr. Dept in the State? I am not clear in my mind how far any general set of instructions should be approved by Govt. They may be founded on Govt Rules & Contemplated in the Dr

(6) Draw draft as revised
Hon
29/3

NOTE—Contn. sheet.

G.P.P.—70,000—17-12-15

(4

G. R. S. 12]

General and Revenue Secretariat. | L&S File No. 12 of 1915.

Serial No.	
27	H. Q. D. No 7500-09 7-4-16 to the Chief Engrs, Presidency Dist Bds, Ber Circle & Sau Circle Circulating the type designs of drinking water wells together with certain instructions for the information of the Dist Bds.

NOTE—Contn. sheet.

TELEGRAPHIC ADDRESS: *Statewoks.*

IV 11/3 M

LB. 12-11-26

5

No. 2178/3 (2 Copying instructions & 2 Type designs in 1 Sheet.)

MYSORE P. W. DEPARTMENT.

CENTRAL OFFICE,

Bangalore. 6th March 191 6

From Rajasabhabhushana

KARPUR SHRINIVASRAO, ESQ., B.SC., L.C.E., M.R.A.S.,

Chief Engineer of Mysore,

Bangalore.

To

V.R.Thyagaraja Iyer, Esq., M.A.,

Secretary to Government, Revenue Department,

Bangalore.

Sir,

Adverting to paras 7 and 11 of G.O. No. 5248-59/San.38-12-38 dated the 6th January 1915, I have the honour to forward herewith a set of instructions for sinking drinking water wells therein called for, with two type designs.

I have the honour to be,

Sir,

Your most obedient servant,

R V Sundaramma

For Chief Engineer of Mysore.

S.S.

GPB—5,000—16-1-15

1915 16

MYSORE P. W. DEPARTMENT.

No. 2178

From

THE CHIEF ENGINEER OF MYSORE.

Bangalore.

To The Secretary to Governme
Revenue Department

Dated 16th March 1916

Despatched 10 - 3 - 1916

Enclosure No. 3. (1 Copy instruct
2 Type designs
1 Sheet

SUBJECT.

Forwards a set of instructions
for sinking drinking water wells &
two type designs

Enc. to L.B. 12-15-26

(6

Instructions for sinking draw-wells for domestic purposes.

Site - The first and foremost point for consideration in connection with the construction of drinking water wells is the selection of suitable site. A site where there is likely to be an abundant supply of underground springs and its surroundings are pure and free from contamination of any kind and surface drainage should be selected.

A careful study of the existing wells in the neighbourhood and the character of the soils through which they are sunk and the quality of water in them, will be a safe guide for determining whether a site is favourable or otherwise in regard to cost and potability of water and permanency of its supply.

In the location of sites for drinking water wells, the following injunctions are necessary for preventing epidemics in the village or villages which may use the well

1. Choose fairly high ground in preference to low.

2. As far as possible avoid sites quite close to a village. Sites above the village are preferable to those below it and in any case, the surface drainage should not enter into the well.

3. Proximity to the grave yards and cremation ground should be avoided and the sites should be free from the possibility of contamination by infiltration of sullage or water from land fouled in any way.

4. Sites in the midst of trees are equally objectionable on account of leaves dropping and rotting in water.

5. Avoid sites containing brackish or bitter water.

S O I L. -- Economy is the chief consideration in well-sinking operations and the maximum efficiency of a well must

be secured with the minimum cost. To make the cost of a well less expensive, avoid as far as possible rocky, bouldry, sandy and Sudda soils; otherwise the cost will be prohibitive not to speak of the disappointment. Very soft soil disintegrates by the action of water sooner than fairly hard-earth and gravel, unless the sides are protected from falling with some casing preferably stone-lining. In fairly hard ground which does not disintegrate by the action of water, the lining need not be carried through, but to a few feet from the surface in the alluvial soil below the ground.

S P R I N G S. Except where impermeable rocks exist, water in more or less quantities is to be found everywhere beneath the surface of ground.

The supply near the surface is due to springs from the percolation of rain water on the ground which should necessarily be of a limited character as it is met with in a few feet of the surface of ground.

The deep-seated or subterranean supply is what is met with at a considerable depth below the ground and this does not get exhausted as perennial springs feed it. The depth at which this permanent zone of supply is met with below the surface of ground depends upon the geological formation of the earth-crest. If the soil is alluvial, as a general rule, water-bearing strata will be met within easy reach below the surface, say 20 to 30 feet In harder crests it varies from 30 to 60 or even 80 feet below surface. This zone can be safely relied upon for an unfailing supply.

W E L L S. -- The ordinary well is simply a square or a circular hole dug on the alluvial soil below ground lined for a few feet of its depth from the surface with some casing to protect the sides from falling. The round section is preferable to square-

section for the constructive ~~construction~~ convenience and strength.

With wells of average depth which are found generally near the villages, the supply will be either precarious or there will be no supply at all in the dry season when it is needed most except in the alluvial soil and a few favourable spots. It is a mistake to make wells very shallow unless surface springs give copious discharge during dry season.

In sinking wells it is very necessary to have trial borings of not less than three feet in diameter in the first instance up to the level of water bearing strata.

This trial will show definitely whether the site is a favourable one in every way in regard to the supply and its potability consistent with economy, and if not, other sites should be tried.

A typical well is a circular shaft of small dimensions sunk in a fairly hard ground to a great depth where permanent zone of springs is met with and lined with size or rough stones where necessary to prevent sides from ~~xxxxxxx~~ slipping.

The following precautions are necessary in sinking wells:--

1. The sinking of the shaft must stop when the inflow is in excess of the quantity which can be removed; otherwise the excavation will be flooded interfering with the completion of the well.

2. The lining should on no account be built before tapping the permanent springs.

3. The lowest or bottom course of the lining to consist entirely of through stones or slabs of the required thickness firmly bedded truly level and the upper courses built on it keeping them truly vertical.

4. In the lining place through stones three feet apart in each course, care being taken that the stones in successive courses may

9

not be one over the other. These through stones bind the work together and carry the weight uniformly.

5. The space between the excavation and the back of the lining, if any, be filled up with small stone jelly as the courses are raised from bottom. Under no circumstances this space should be filled up with earth on economical grounds.

6. As there is always a considerable quantity of water spilt round a well which should not be allowed to percolate back into the soil and into the well, the lining may be raised two feet above ground level and it should be surrounded by a platform of not less than four feet sloping outwards and provided with a gutter of V shaped drain to collect the waste water which may be led with advantage, to a garden if close by, or to a sufficient distance to a watercourse. The length of this bed of drain should be equal at least to the depth of the well. Parapets may then be built to a height of three feet either of brick or stone masonry with sufficient number of drawing pulleys according to requirements

7. During the sinking operationsothe excavation should be protected with fencing all round and in close proximity to roads and paths with lights also or otherwise protected to prevent accidents.

Two type designs accompany to give an idea as to how the shaft has to be sunk in different soils and the casing to be given to protect the sides.

5

"COPY."

Assistant Secretary to Government,
Public Works Department.

Dwg 7

(10)

G.R.S. 28]

Instructions for Sinking wells

File No. 12/15

Diary No. of letter replied to 3320

Serial No. 27

Proceedings of the Government of His Highness the Maharaja of Mysore

GENERAL AND REVENUE SECRETARIAT.

, *the* 191

Date of issue 7.4.16.

Signed by M.A.V. Ramanathan

READ— Letter No 2178 dated the 6th March 1916 from the Chief Engineer in Mysore forwarding with reference to paras 7 and 11 of G.O. No. 5248-59 Sam 38-12-38 dated the 6th January 1915, a Set of instructions for Sinking Drinking water wells with two type designs for wells (Printed as annexure).

ORDER THEREON. No.

over.

SUBJECT.

GPB—50,000—1-12-12

11

Order 7500-10 LB 12-15= 97.4.16.

The type designs and
the instructions are ~~approved by~~ circulated for the information of the Dt Boards

2. The Chief Engineer is requested to make arrangements for supplying the Presidents of District Boards with copies of the type designs and furnishing them with a few simple suggestions for selecting suitable sites for wells with reference to water bearing strata, ~~as directed~~ in para 7 of G.O. No 5248-SH/ ~~Such instructions have not already been issued~~ in accordance with para 7 of G.O. No 5248-59/Samy 38-12-38 dated 6th January 1915.

Addl Secretary to Govt
20/3 Rev Dept. 23/3/16

To
The Chief Engineer
Presidents of Dt Bds
" Rev Commr
" Samy Commr
Copy to Bor I

May this help

Government of His Highness the Maharaja of Mysore.

GENERAL AND REVENUE DEPARTMENTS. Translated

G. O. No. 7500-10—L. B. 12-15-27, dated 7th April 191(

Drinking Water Wells.

Circulates type designs and certain instructions for sinking — for the information of the several District Boards.

No. 7500-10—L. B. 12-15-27, DATED 7TH APRIL 1916.

PROCEEDINGS OF THE GOVERNMENT OF HIS HIGHNESS THE MAHARAJA OF MYSORE.

GENERAL AND REVENUE DEPARTMENTS.

READ—

Letter No. 2178, dated the 6th March 1916, from the Chief Engineer in Mysore, forwarding, with reference to paragraphs 7 and 11 of Government Order No. 5248-59—San. 38-12-38, dated the 6th January 1915, a set of instructions for sinking drinking water wells with two type designs for wells.

*Printed as annexure.

Order No. 7500-10—L. B. 12-15-27, dated 7th April 1916.

The type designs and the instructions are circulated for the information of the District Boards.

2. The Chief Engineer is requested to make arrangements for supplying the Presidents of District Boards with copies of the type designs and furnishing them with a few simple suggestions for selecting suitable sites for wells, with reference to water bearing strata, in accordance with paragraph 7 of Government Order No. 5248-59—San. 38-12-38, dated 6th January 1915.

V. R. THYAGARAJA IYER,
Secy. to Govt., Rev. Dept.

To—The Chief Engineer in Mysore.
The Presidents of District Boards.
The Revenue Commissioner in Mysore.
The Sanitary Commissioner in Mysore.

Exd.—C. R.

No 7500-10-L.B. 12-15-27, dated 7th April 1916.

Annexure.

INSTRUCTIONS FOR SINKING DRAW-WELLS FOR DOMESTIC PURPOSES

Site.—The first and foremost point for consideration in connection with the construction of drinking water wells is the selection of suitable site. A site where there is likely to be an abundant supply of underground springs and its surroundings are pure and free from contamination of any kind and surface drainage, should be selected.

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4. Sites in the midst of trees are equally objectionable on account of leaves dropping and rotting in water.

5. Avoid sites containing brackish or bitter water.

Soil.—Economy is the chief consideration in well-sinking operations and the maximum efficiency of a well must be secured with the minimum cost. To make the cost of a well less expensive, avoid as far as possible rocky, bouldery, sandy and *sudda* soils ; otherwise, the cost will be prohibitive not to speak of the disappointment. Very soft soil disintegrates by the action of water sooner than fairly hard-earth and gravel, unless the sides are protected from falling with some casing, preferably stone-lining. In fairly hard ground which does not disintegrate by the action of water, the lining need not be carried through, but to a few feet from the surface in the alluvial soil below ground.

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